

The **NORCHEM Sharpshooter Model 448** liquid polymer system is designed to process up to 2.0 GPH of a neat liquid polymer and deliver 0.5 to 4.0 GPM (30 to 240 GPH) of a nominal 0.1 to 2.0% aqueous polymer solution. The Sharpshooter 448 system is modular in design consisting of a liquid polymer injection module and booster module assembly.

SHARPSHOOTER MODEL 448 LIQUID POLYMER SYSTEM SPECIFICATIONS

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|--------------------------|--|--|
| FRAME: | SIZE: CONSTRUCTION: | 16" W x 20" L x 30" H MILD STEEL, DuPONT IMRON POLYURETHANE COATING |
| INJECTION MODULE: | PUMP: DRIVE: CAPACITY: | DIAPHRAGM-TYPE, HIGH VISCOSITY ENCAPSULATED SOLENOID PULSE DRIVE NEAT POLYMER FLOWRATE 0.0 – 2.0 GPH (48 GPD) |
| BOOSTER MODULE: | PUMP: DRIVE: MOTOR: DISCHARGE: | CENTRIFUGAL-TYPE, CAST IRON, MODIFIED FOR POLYMERS CLOSE-COUPLED .75 HP, 3450 RPM, CONTINUOUS DUTY, ODP 10 – 60 PSI 0.5 – 4.0 GPM |
| SOLUTION OUTPUT: | PRIMARY FLOW: SECONDARY FLOW: TOTAL FLOW: | 0.5 – 4.0 GPM (240 GPH) NONE 0.5 – 4.0 GPM (240 GPH) |
| CONCENTRATION: | SOLUTION: | PRIMARY 0.2 – 2.0% VOLUME ON VOLUME TOTAL 0.2 – 2.0% VOLUME ON VOLUME |
| UTILITIES: | ELECTRICAL: WATER: | 120/1/60 20 AMPS 40 – 100 PSI 25 GPM CLEAN SOURCE |

ENGINEERING SPECIFICATIONS:

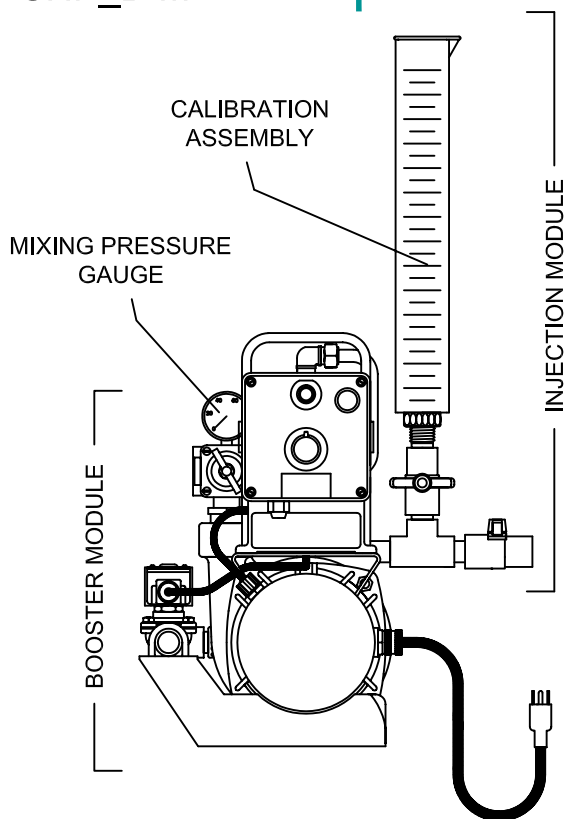
Sharpshooter Model 448 shall be provided to rapidly dilute, activate and feed emulsion, dispersion and solution polymers at 240 GPH of polymer solution at concentrations to 2%. The system shall contain a four step controlled energy hydraulic circuit which instantaneously dilutes and blends the polymer to it's most efficient state for use in the process. The unit shall be designed with full pressure-controlled, inline inversion capability and shall not be limited by a minimum retention time restriction. The polymer system shall be capable of providing a 15 – 20 PSI pressure boost and shall not rely on available inlet water pressure to discharge the polymer solution product. The system shall be modular in design and shall consist of a polymer injection module, booster module, premix manifold assembly, inlet water solenoid valve, primary and secondary inlet water flowmeter, primary and secondary inlet water flow controllers, proportioning pressure regulator to balance primary and secondary flow circuits, mixing pressure regulator adjustable from 10 to 70 PSI, mixing circuit pressure gauge and inlet water throttling valve.

PLAN & ELEVATION

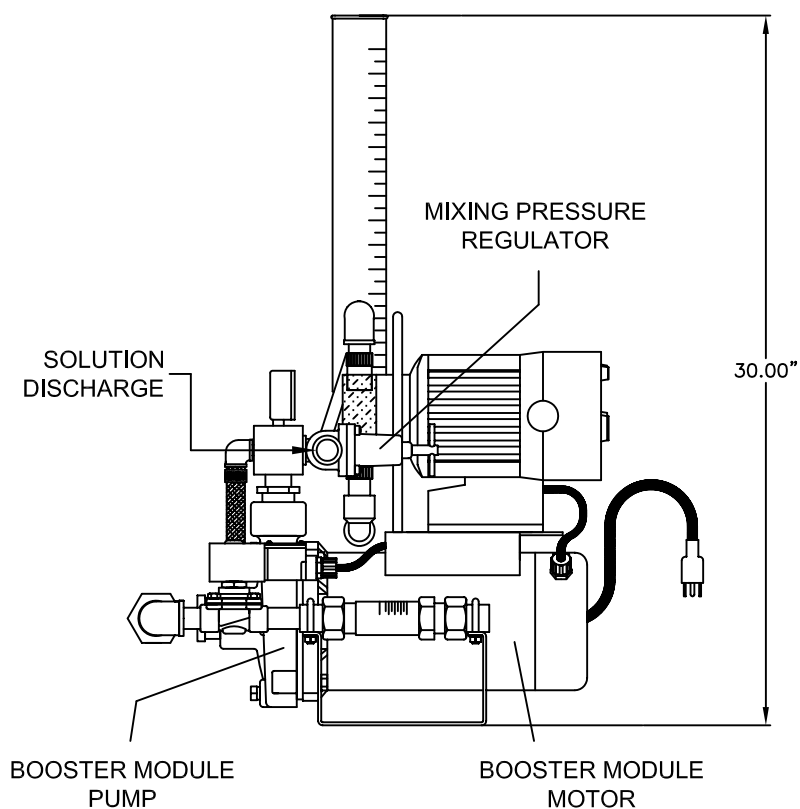
SHARPSHOOTER

SHP_DIM

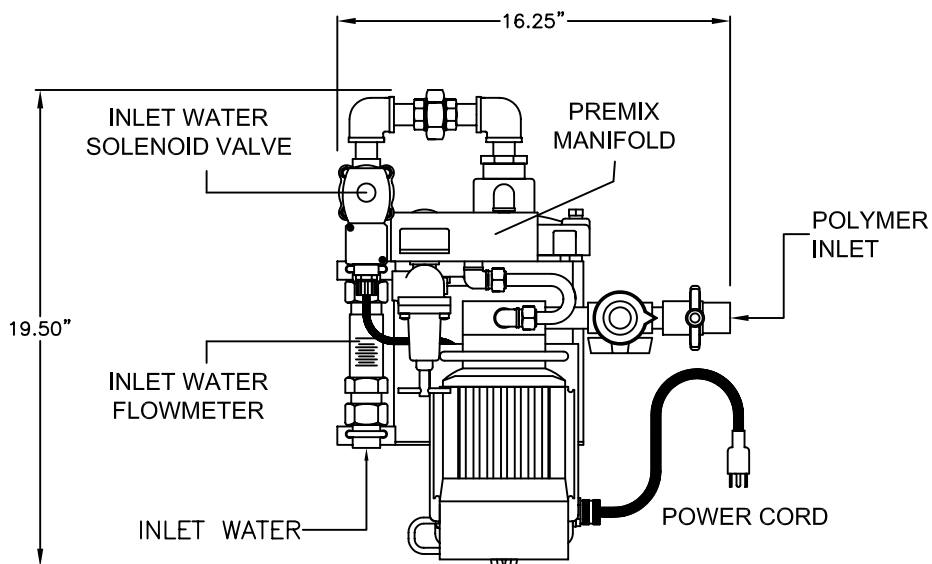
(TYPICAL TO ALL SHARPSHOOTER SYSTEMS)



FRONT VIEW



LEFT END VIEW



PLAN VIEW

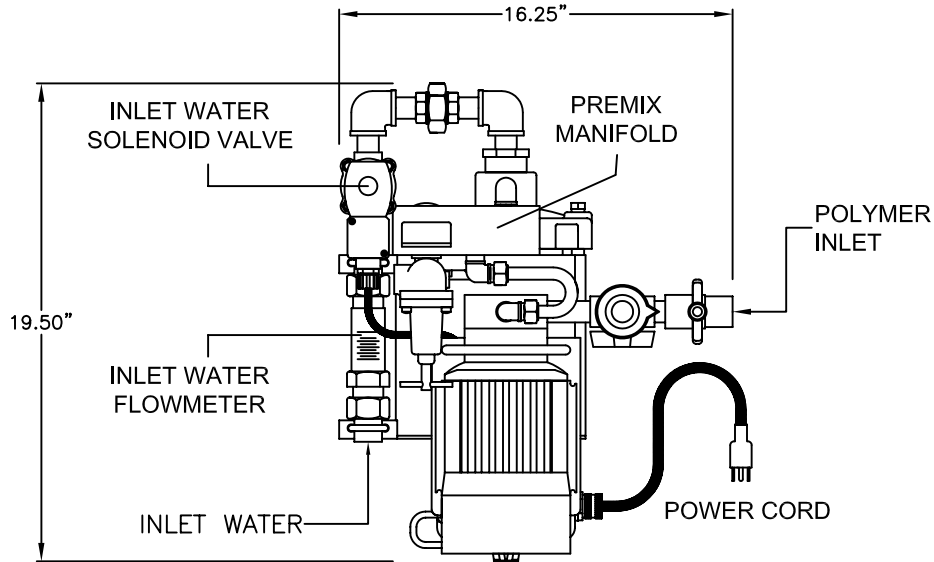
NORCHEM INC.

PLAN & ELEVATION

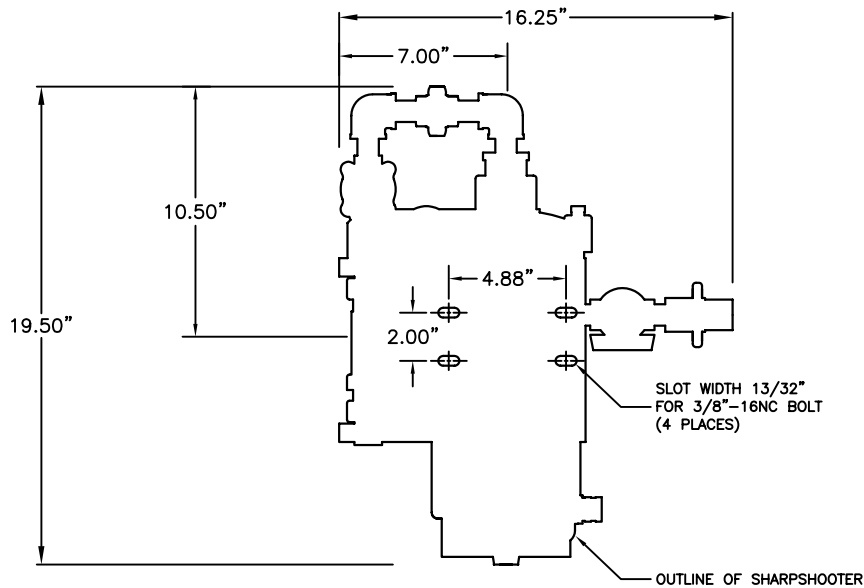
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SHP_TYP_MTG

(TYPICAL INSTALLATION DIMENSIONS)



PLAN VIEW



MOUNTING DETAIL

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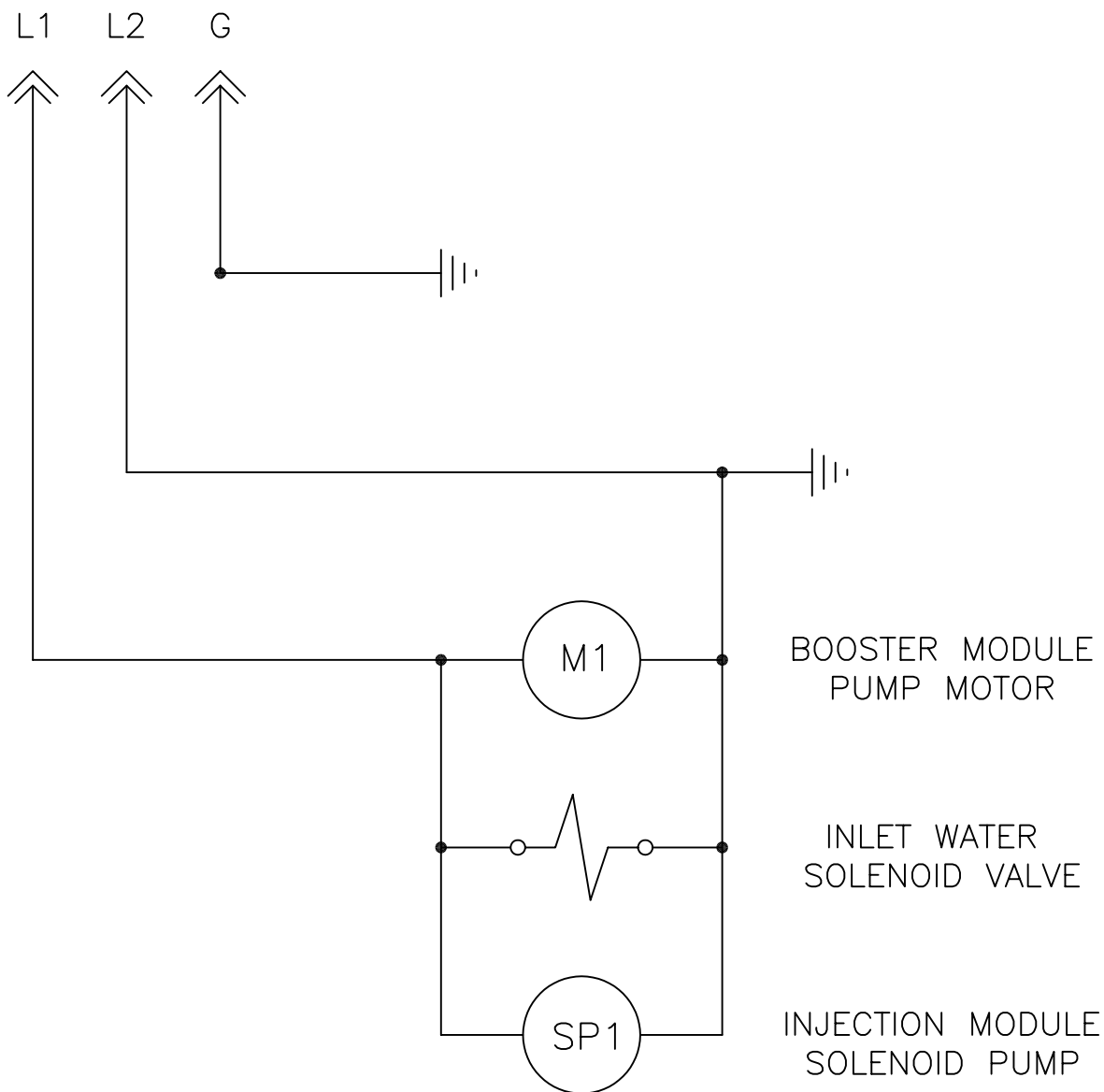
ELECTRICAL SCHEMATIC

SHARPSHOOTER

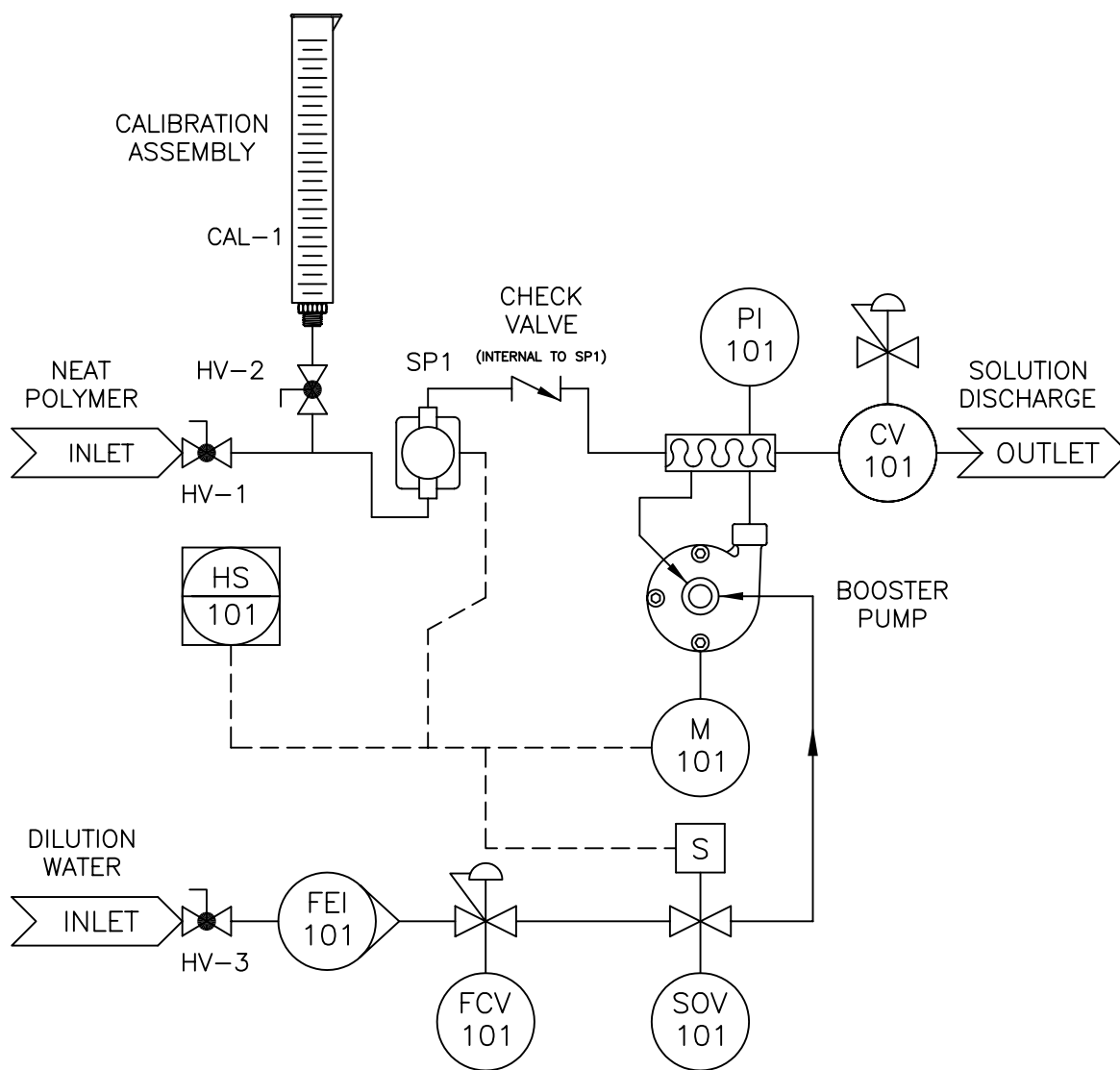
SHP_ELE

(TYPICAL TO ALL SHARPSHOOTER SYSTEMS)

INCOMING POWER
115 VAC/1 PH/60 HZ



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LEGEND

| | |
|---------|---|
| HV-1 | POLYMER SUPPLY SHUTOFF HAND VALVE |
| HV-2 | CALIBRATION ASSEMBLY ISOLATION HAND VALVE |
| HV-3 | INLET WATER THROTTLING VALVE |
| CAL-1 | CALIBRATION CYLINDER |
| PI-101 | MIXING PRESSURE GAUGE |
| SP1 | INJECTION MODULE SOLENOID PUMP w/INTERNAL CHECK VALVE |
| M-101 | BOOSTER PUMP MOTOR |
| SOV-1 | DILUTION WATER INLET SOLENOID VALVE |
| CV-101 | MIXING PRESSURE CONTROL VALVE |
| FEI-101 | DILUTION WATER INDICATING FLOW METER |
| FCV-101 | DILUTION WATER FLOW CONTROL REGULATOR |
| HS-101 | OFF/ON SWITCH |